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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,778	03/14/2005	Edwin Wolterink	NL 020902	1800

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS  
P.O. BOX 3001  
BRIARCLIFF MANOR, NY 10510

EXAMINER
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TRAN, NHAN T

ART UNIT	PAPER NUMBER
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2622

MAIL DATE	DELIVERY MODE
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05/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/527,778	<b>Applicant(s)</b> WOLTERINK ET AL.	
	<b>Examiner</b> Nhan T. Tran	<b>Art Unit</b> 2622	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 3/14/2005, 2/23/2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16, 18 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group I, claims 1-16, 18 & 19 in the reply filed on 2/23/2007 is acknowledged. Accordingly, claim 17 is withdrawn from consideration.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

3. The information disclosure statements (IDS) submitted on 3/14/2005 & 11/28/2005 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

### ***Specification***

4. The Applicant is suggested to follow guidelines (see **bold** headings for this instant application) illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.**
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.**
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.**
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).**
- (i) DETAILED DESCRIPTION OF THE INVENTION.**
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

### ***Claim Objections***

5. Claims 2, 8-10 are objected to because of the following informalities:

Regarding claim 2, this claim recites "the projection of the hole" which should be corrected to read as -- a projection of a hole --.

Regarding claim 8, this claim recites "axis op the lens" which should be corrected to read as -- axis of the lens --.

Regarding claims 9 & 10, each of these claims recites "the spacer substrate" which is should be corrected to read as -- a spacer substrate --.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-5, 7-15, 18 & 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Suda et al. (US 2004/0012698).

Regarding claim 1, Suda discloses a camera device (Figs. 1A-B, 26A-C & 56 and [0373]) comprising an image capturing element (photosensor element 104 in Fig. 1A or 503 in Fig. 26B), a lens element (100 in Fig. 1A or 601 in Fig. 26B) for projecting an object on the image capturing element, a spacer means (combination of 103, 102 and 105 or combination of 509 and 522 in Fig. 26B) for maintaining a predetermined distance between the lens (100 or 601) and the image capturing element (104 or 503), and a lens substrate (combined 101 and 103 in Fig. 1A or 512 in Fig. 26B) for carrying the lens, characterized in that the spacer means comprises an adhesive layer (105 in Fig. 1A or 509 in Fig. 26B). See Figs. 1A & 26B, [0119], [0235] and [0243].

Regarding claim 2, Suda also discloses that the adhesive layer (105 or 509) has the shape of a rim (Fig. 2C and Fig. 26C) outside a projection of a hole on the spacer means coaxially positioned relative to a main optical axis of the lens element.

Regarding claim 3, it is clear that the adhesive layer comprises an ultra-violet curing resin (see [0137]).

Regarding claim 4, also disclosed by Suda is that the adhesive layer comprises a thermo-hardening resin (see [0137], wherein thermo-hardening is performed by heating instead of ultraviolet irradiation).

Regarding claim 5, Suda further discloses that the spacer means comprises a spacer substrate (522 in Fig. 26B; [0243]).

Regarding claim 7, it is also seen in Fig. 26B of Suda that the spacer means further comprises a cover substrate (506).

Regarding claim 8, it is also seen in Fig. 40B (which is a modification of Fig. 26B) that the cover substrate (506) comprises a second lens (801) substrate having a second lens element for projecting an object on the image capturing element, the main optical axis of the lens element coinciding with the main optical axis of the second lens element (see Fig. 40B and [0295]-[0298]).

Regarding claim 9, as shown in Fig. 1A and Fig. 40B, the adhesive layer (105 in Fig. 1A or 509 in Fig. 40B) is located between a [the] spacer substrate and the image capturing element.

Regarding claim 10, it is also clearly seen in Fig. 26B that the adhesive layer (509) is located between a [the] spacer substrate (522) and the cover substrate (506).

Regarding claim 11, Suda further discloses that the lens element is of replication type (see Figs. 5, 8, 26A-B, 40A-B for the lens element being replicated to form a same type of lens).

Regarding 12, as shown in Fig. 1A, the lens is formed as a convexity in the lens substrate.

Regarding claim 13, as shown in Fig. 40B, the lens (1611) is formed as a concavity in the lens substrate (502). See [0295].

Regarding claim 14, Suda also discloses that the lens substrate is provided with a through hole (formed by shielding layer 224, 225 shown in Fig. 53) whereby the lens element (801) is located within the through hole.

Regarding claim 15, it is clear in Fig. 26B and [0235] that the lens substrate (512) is provided with an infrared reflecting layer (560).

Regarding claim 18, Suda discloses a wafer scale package (Figs. 7, 31) comprising a base substrate (110) having a plurality of image capturing elements (111 and details shown in Figs. 1A & 26B), characterized in that it further comprises a lens substrate (117 in Fig. 8 or 512 in Fig. 26B) having a plurality of lens elements (100) associated with respective image capturing elements, and a spacer means (114) for maintaining a predetermined distance between the lens substrate and the base substrate, whereby the position of the lens substrate relative to the base substrate is fixated by means of an adhesive layer (105). See Fig. 8 and [0152]-[0158].

Regarding claim 19, as clearly shown in Fig. 8 of Suda, the lens substrate (117) having a plurality of lens elements (100).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 6 & 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suda et al. (US 2004/0012698) in view of Broome et al. (US 6,072,634).



Regarding claim 6, Suda discloses that the spacer substrate (522) comprises a hole (see Fig. 26B, wherein a hole is formed between 522 and 508 to contain the photosensors at microlens 516 and allow incident light to reach into photosensors) coaxially positioned relative to a main optical axis of the lens element. Although Suda is silent about that the side of the hole is provided with an anti-reflection layer, such anti-reflection layer is well known in the art as taught by Broome. Fig. 1 of Broome shows a lens spacer (150) which is made by opaque black material, wherein the side surface of spacer hole (e.g., internal surface) is either diffused or has micro grooves to prevent specular reflection of light into the rest of the lens system, thereby stray light is suppressed and aliasing effects are eliminated (see Broome, col. 5, lines 55-58 and col. 1, lines 9-11).

Therefore, it would have been obvious to one of ordinary skill in the art to provide an anti-reflection layer on the side of the hole of the spacer of Suda so that stray light would be suppressed and aliasing effects would be eliminated to enhance image quality as taught by Broome.

Regarding claim 16, Suda discloses the lens substrate (103) which also acts as an aperture as shown in Fig. 1A but Suda is silent about the lens substrate is provided with an anti-reflection layer.

However, it is well recognized by Broome that the lens substrate (150), which also acts as an aperture, is provided with an anti-reflection layer as analyzed in claim 6 to suppress stray light and eliminate aliasing effects.

Therefore, it would have been obvious to one of ordinary skill in the art to provide an anti-reflection layer on the lens substrate of Suda so that stray light would be suppressed and aliasing effects would be eliminated to enhance image quality as taught by Broome.

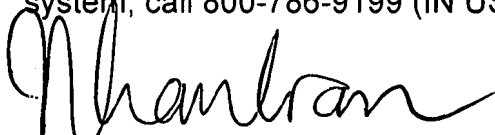
### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Tran whose telephone number is (571) 272-7371. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2622

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Nhan Tran', written in a cursive style.

NHAN T. TRAN  
Patent Examiner